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DETERMINING THE TRAINING NEEDED FOR SELECTED FARM RELATED OCCUPATIONS IN FOUR COUNTIES IN OKLAHOMA

By

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DETERMINING THE TRAINING NEEDED FOR

SELECTED FARM RELATED OCCUPATIONS

IN FOUR COUNTIES IN OKLAHOMA

Report Approved:

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Scope and Method of Study: Personal interviews were conducted with predetermined, important selected farm related occupations to see what the trend will be in the near future concerning employment opportunities, and the training needed for working in these farm related businesses. The five farm related occupations used in this study were: Farm Machinery; Dairy Processing; Buildings and Structures; Nursery Production; and Feed, Seed, and Fertilizer. The average rating of the 63 farm related businesses concerning different areas of training was determined for indicating the importance of a particular area of training.

Findings and Conclusions: All farm related businesses showed an expected increase in employment with Nursery Production indicating the largest increase of 60 percent. Vocational agriculture was found to be important training and a farm background was of some value. Training in agronomy, farm mechanics, and farm business seemed to be important to Farm Machinery, Nursery Production, and to the Feed, Seed, and Fertilizer business, but only of some value to Buildings and Structures. The Feed, Seed, and Fertilizer, and Farm Machinery businesses said that some training in livestock and poultry was needed. Most businesses felt that FFA activities were of some benefit. English and basic arithmetic were highly important to all related occupations concerned. It was revealed that salesmanship was rated highly important by most of the related occupations. Training in science was of some importance. Buildings and Structures found industrial arts to be highly beneficial. All farm related occupations agreed that drivers' training was important. The Nursery Production felt additional training in horticulture is needed for working in that occupation.

It appears that teachers of vocational agriculture need to become more aware of the importance of present training in vocational agriculture for related occupations and how they could, at the same time, better utilize opportunities and possibilities for training for farm related occupations as well as for proficiency in farming.

ADVISER'S APPROVAL _____

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Special credit is due to the many farm related businesses for their most helpful cooperation while the information needed was being obtained.

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CHAPTER I

PURPOSE AND DESIGN OF THE STUDY

Introduction

The United States is one of the leading countries in agriculture. It produces with such abundance that it has a large surplus of agriculture products now in storage.

Rapid technological advances in agricultural production have caused many changes in the field of agriculture over the last few decades. One of these changes is the decrease in the percent of the population doing farm work. This change has brought about the problem of where these people will go and most important what they will do to earn a living. Because of this decrease, there will be fewer chances for high school graduates of vocational agriculture to enter farming in the future.

Another important change has been the increase in the number of people needed to supply the farmer with needed services and goods and to market his product. This change has brought about new job opportunities in farm related occupations for those who could not enter into farming.

Today there are fewer farmers needed to produce the nation's food supply, but due to the mechanization of farming more people are needed to help supply the farmer with goods and services.

Statement of the Problem

As the number of farmers continues to decrease, many high school graduates of vocational agriculture who could not enter into farming obtain jobs in farm related occupations. The questions important to this study are as follows:

(1) What training is needed for high school graduates of vocational agriculture who plan to enter into farm related occupations?

Other questions of secondary importance to this study are:

(2) What farm related occupations are most important in the area to be studied?

(3) What will be the trend in the next five to ten years concerning opportunities for employment in occupations related to agriculture?

Purpose of the Study

Studies concerning the actual training needed for farm related occupations up to the present are limited. It is the purpose of this study to determine from selected farm related businesses what pre-employment training is important in obtaining a job in these farm related occupations. The information obtained through this study may also contribute to the revision of teaching material for vocational agriculture in high school in order to more adequately meet the present needs of our farm youth.

Scope of the Study

This study ~~will cover~~ included four counties in Oklahoma with the intention

that the information obtained here may be applicable to a large portion of the state. The counties were selected due to their convenience in location and as representative of different areas of the state. The information was obtained from those selected farm related businesses located in these four counties. The study consists of the most important farm related businesses in these counties as determined by teachers of vocational agriculture working there.

Limitations of the Study

The study was limited to Stephens and Comanche counties from the southern portion of the state and Payne and Noble counties from the north. Only selected farm related businesses of highest importance located in these counties were used in this study.

Procedure Used in the Study

In order to obtain the information needed to complete the study, the following procedure was carried out:

(1) A list of farm related occupations was obtained from various agricultural occupation booklets.

(2) This list was sent to vocational agriculture teachers located in the four counties. They rated them as to how important each was in their particular county. A definite attempt was made to exclude all occupations which would probably require more than a high school education.

(3) Of the occupations with the highest rating of importance, five were selected as the type of businesses to interview in order to get the information needed.

(4) These five types of businesses were selected primarily on the basis of their rating, but some consideration was given as to their growing importance in these counties. The five selected were as follows: Farm Machinery; Dairy Processing; Buildings and Structures; Nursery Production; and Feed, Seed, and Fertilizer.

(5) An interview form containing all different areas of training usually taught in high schools was the instrument used in rating how important certain areas of training were for a particular type of business. The tentative interview form was then revised by going to one of each of the five related occupations selected and asking them what they felt needed to be added and what should be left out. The personal interview method was used in obtaining the information.

(6) The phone book was used to obtain the address of each farm related business to be visited.

(7) The manager of each business was asked to rate each item of training according to their importance in aiding a high school graduate to obtain a job in their business. Each item of training was to be rated either essential, important, of some importance, or of no importance. Additional comments and suggestions were encouraged.

(8) Sixty-three farm related businesses from the four counties were interviewed. The total number of each type of business visited was as follows: Farm Machinery 13; Dairy Processing 3; Buildings and Structures 21; Nursery Production 7; and

Feed, Seed, and Fertilizer 19.

(9) In presenting the data a score or value was given to each rating. The values of each were as follows: essential 100 points, important 66 points, of some importance 33, and those of no importance were worth 0 points. The mean rating was taken on each item of training. Each of the five related occupations ratings were kept separate in order that they could be compared with one another. The "average total rating" was obtained by multiplying the number of businesses in each category by its average and then dividing by the total of all in the study.

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CHAPTER II

REVIEW OF LITERATURE

There were several studies that were reviewed and found helpful to this study concerning training needed for farm related occupations.

The Department of Education staff at the University of California found through a study concerning the training required by workers in agricultural business and industry that about one-fifth of the 24,305 persons employed by the companies needed agricultural training. Over 1,400 new agriculturally trained persons will be needed in the immediate future. Also, agricultural training at the high school level was adequate for a large proportion of the semi-skilled and skilled group, while more advanced training was needed for sales personnel. Training in crop production was important for all levels of employment. Shop skills were of major importance for semi-skilled and skilled employment. In addition to agricultural training these employees were found to need some business education. Salesmanship and other fields of business education were rated particularly high for sales persons, supervisors, and managers. Training in speech and mathematics was about equally important for all levels of employment. It appeared evident that a training program to prepare persons for employment in agricultural business concerns is needed in California. The greatest need for this training was found to be at the junior college level.(15)

A study was made by the rural education department at New York State College of Agriculture concerning the job opportunities available

in seventeen related occupations and the general nature, level, and scope of pre-employment training needed by prospective employees. This study revealed that most employers wanted their employees to have a high school education. In addition a farm background was considered desirable by over fifty percent. The conclusions reached in this study were that special vocational training is not required for employment in the related occupations investigated.

Charles G. Rohr(13) reported from the University of Wisconsin that major emphasis in vocational agriculture should be on the general aspects of farming, particularly, as they relate to crops and soils, dairy industry, livestock, farm machinery maintenance, and horticulture. He also found that employers desire prospective employees with farm background and farm experience.

John C. Billick(3) at Ohio State University found that more than 87 percent of the agricultural businesses interviewed believed vocational agriculture is a desirable type of training for the majority of farm related occupations. In addition farm experience was rated high for workers whose jobs involved direct contact with farmers.

Norman K. Hoover(10) conducted a study concerning the factors associated with establishment in related agricultural occupations and their relationship to the high school curriculum in vocational agriculture. He found that the vocational agriculture graduates had achieved a higher mean degree of establishment as measured by: job satisfaction score, number of promotions, increase in net worth, annual income, and leadership participation. For the hypotheses dealing with occupational classification of fathers and place of residence while the student was in high school, a significant difference was found only with respect to the criterion, increase in net worth. No relationship was found between rank in high school

class and degree of establishment in an occupation.

Lloyd L. Henslee[9] found in a study conducted at Oklahoma State University that vocational agriculture was stated as being essential or important by over 59 percent of those contacted in a study of the relation of the total high school training of vocational agriculture graduates and their establishment in employment.

R. J. Agan[1] stated in the Agriculture Education magazine on page 190 that,

> For teachers of vocational agriculture who want to train for farm related occupations, do a better job with the present program of vocational agriculture. Teach the solution of local farm problems which face farmers in your community; train for proficiency in farming, stressing farming programs of future farmer activities. Under the teaching and direction, the young man will show his ability to learn, cooperate and get along with others, and advance under self initiative. Then let the farm related business employer do the rest of the training.

A study made by Joe Thurman Griffin[7] at North Carolina State College indicated that the students, graduates, managers of agribusiness firms, and parents were highly in favor of using "related occupations" as a part of the course of study for students of vocational agriculture. The findings of his study revealed that the teacher of vocational agriculture should include related occupations in the four year course of study for all day students.

A study made by Jimmy Butler[5] at the University of Tennessee concerning the qualifications, education, and training which employers in agriculturally related occupations desire in their employees, revealed that of 1,709 graduates of high school, 640 were employed in agriculturally related occupations. This study along with other studies in the review of literature verifies the statement made previously that many students of vocational agriculture enter into farm related

occupations. This study further showed that 73 percent of these 640 needed agricultural training. In addition 40 percent required farm experience and high school vocational agriculture training. An average of 75 percent of the employees who needed agriculture training also needed training in general agriculture. Small percentages of each employment group needed concentrated training in crops, livestock, or other areas.

At Ohio State University, Ralph Edward Bender(2) found that of each one hundred graduates out of school five years, 45 were engaged in farming or related agriculture positions.

A University of Maryland study made by Wayne E. Busbice(4) showed that of 1,131 vocational agriculture graduates, 39 percent were in agricultural occupations. Of the agricultural group, 81 percent were farming and 18 percent were in related occupations.

Edward C. Perkins(12) found, in a study conducted at the University of Vermont, that over a ten year period, twelve percent of all boys who had taken vocational agriculture entered occupations related to agriculture.

In a study by Dallas R. Siler(14) at the University of Arizona, it was found that among the 138 former vocational agriculture students engaged in regular vocations 37 percent were farming and fifteen percent were in work related to farming.

A study made at Ohio State University revealed that the training of persons with a farm background is below that normally desired for employment in the larger industries. Also, employees with farm backgrounds lack training in mathematics, spelling, and trades and industry skills.(8)

Norman K. Hoover[11] stated in the Agriculture Education magazine on page 220 that,

> To teach about agricultural occupations informally, as a part of the regular program in vocational agriculture, a teacher must develop an awareness of the opportunities to relate occupational information with the regular subject matter dealing with crop and livestock production; he must use the farming programs of students, the farm mechanics work and the FFA activities as opportunities to acquaint students with agricultural occupations.

In summarizing, it appears that some type of agricultural training is needed for employment in farm related occupations. A farm background is desired by many employers of related occupations. Training received through vocational agriculture in high school is valuable training. Most studies revealed a high school education was needed for employment in farm related occupations. Studies also show that many students enter into farm related occupations after graduation from high school.

CHAPTER III

PRESENTATION AND ANALYSIS OF DATA

Data presented in this chapter were obtained after determining the most important farm related occupations in the area studied. Sixty-three selected farm related businesses were interviewed in order to get the information needed to complete the study.

This study attempted to determine the most important farm related occupations; what pre-employment training is needed in order to work in any of the selected farm related occupations, and the trend in the next five to ten years concerning opportunities for employment in occupations related to agriculture.

General information concerning the farm related businesses is presented in Table I. Table II presents the importance of vocational agriculture for employment in these farm related occupations. Tables III through XIV present the importance of different areas of training to employment in any of the farm related occupations. Table XV shows what additional training is needed for a farm related occupation.

TRENDS IN Employment in Farm Related Businesses

The data in Table I reveals that all five farm related businesses expect an increase in employment in the next five to ten years.

Nursery Production, with an expected 60 percent increase in employment, is by far the fastest growing farm related occupation of the five.

Farm Machinery expects to increase its employment from a present 49 to 70 employees, which is a 42.8 percent increase.

TABLE I

FUTURE TREND IN EMPLOYMENT IN THE NEXT FIVE TO TEN YEARS

FOR SELECTED FARM RELATED OCCUPATIONS

Business	Number of Business	Present		Future		Precent Increase
		Total	Average Per Business	Total	Average per Business	
Farm Machinery	13	49	3.7	70	5.3	42.8
Dairy Processing	3	240	80.0	248	82.6	3.3
Buildings and Structures	21	175	8.3	220	10.4	25.6
Nursery Production	7	35	5.0	56	8.0	60.0
Feed, Seed, and Fertilizer	19	211	11.1	219	11.5	3.7

A gain from 175 to 220 employees or 25.6 percent increase is expected by Buildings and Structures.

An increase of 3.7 percent in employment is anticipated by the Feed, Seed, and Fertilizer businesses.

Dairy Processing shows the smallest increase of 3.3 percent, but they have the largest average number of employees per business.

Importance of Training in Vocational Agriculture

Table II shows 69.2 percent of the Farm Machinery businesses indicating four years of vocational agriculture training in high school as important for their employees, while 30.6 percent indicated two to three years as being important.

Thirty-three percent of the Dairy Processing businesses chose three years of vocational agriculture training as important. Thirty-three percent believed two years was important. Thirty-three percent felt that no vocational agriculture training was necessary; this may be because many of these employees have no direct contact with the farmer.

Thirty-three percent of the Buildings and Structures said two years of vocational agriculture training was important while 23.8 percent indicated no vocational agriculture training was needed. Nineteen percent felt one year would be important and 14.2 percent thought four years to be beneficial. Three years was indicated as important by 9.5 percent of the Buildings and Structures.

Seventy-one percent of the Nurseries indicated that four years of vocational agriculture training was important training. Twenty-eight percent felt that two to three years was important.

Fifty-seven percent of the Feed, Seed, and Fertilizer businesses show four years of vocational agriculture as important. Twenty-one percent said two years was important; 10.5 percent indicated one year was

TABLE II

TRAINING IN VOCATIONAL AGRICULTURE CONSIDERED IMPORTANT FOR SELECTED FARM RELATED OCCUPATIONS

YEARS	Farm Machinery %	Dairy Processing %	Buildings and Structures %	Nursery Production %	Feed, Seed, And Fertilizer %
0	0	33.3	23.8	0	5.2
1	0	0	19.0	0	10.5
2	15.38	33.3	33.3	14.2	21.0
3	15.38	33.3	9.5	14.2	5.2
4	69.23	0	14.2	71.4	57.8

important and 5.2 percent said no training in vocational agriculture was necessary for the Feed, Seed, and Fertilizer business.

Importance of Farm Background

Table III reveals that a farm background is almost important for Farm Machinery, Nursery Production, and the Feed, Seed, and Fertilizer businesses. Buildings and Structures rated a farm background almost of some importance while Dairy Processing found it to be of no importance.

The average total rating shows a farm background to be of some importance to most of the farm related occupations.

Training in Agronomy

An analysis of Table IV shows identification of crops and insect control as being important training for Farm Machinery and Nursery Production. Only with Buildings and Structures and Dairy Processing was identification of crops and insect control of no importance.

The kinds and uses of fertilizers were rated as important for Nursery Production and the Feed, Seed, and Fertilizer businesses and only of some importance by Farm Machinery. The kinds and uses of fertilizer was of no importance to Dairy Processing and Buildings and Structures.

Planting of crops and soil management and conservation are of some importance for all farm related occupations except Dairy Processing and Buildings and Structures.

The data also shows that harvesting of crops is important training for the Farm Machinery business while only of some importance for Nursery Production and Feed, Seed, and Fertilizer. Harvesting of crops is of no importance for either Dairy Processing or Buildings and Structures.

Diseases of crops is of some importance to Nursery Production and the Feed, Seed, and Fertilizer business, but it is of no importance to Farm Machinery, Dairy Processing and Buildings and Structures.

TABLE III

AVERAGE RATING OF IMPORTANCE OF A FARM BACKGROUND FOR

SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings And Structures	Nursery Production	Feed, Seed, And Fertilizer	Average Total
A farm background	59	11	28	62	61	47

TABLE IV

AVERAGE RATING OF IMPORTANCE OF TRAINING IN AGRONOMY FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings And Structures	Nursery Production	Feed, Seed, And Fertilizer	Average Total
Identification of crops	59	0	13	33	73	42
Diseases of Crops	28	0	6	42	56	29
Insect Control	38	11	20	61	73	44
Planting of Crops	63	0	11	33	58	38
Pasture and Range Management	38	0	8	19	37	30
Soil Management and Conservation	54	0	13	52	52	37
Kinds and Uses of Fertilizers	58	0	11	85	79	49
Harvesting of Crops	74	0	19	33	54	42

Pasture and range management was only of some importance to Farm Machinery and the Feed, Seed, and Fertilizer business. Buildings and Structures, Dairy Processing, and Nursery Production rated pasture and range management of no importance.

It is worthy to note that with the exception of diseases of crops and pasture and range management, the average total rating of all other items of training in Agronomy was of some importance to most of the farm related occupations.

Training in Livestock and Poultry

The data presented in Table V reveals that the feeding of poultry and livestock is important for the Feed, Seed, and Fertilizer business. Farm Machinery rated the feeding of livestock and poultry of some importance while it was of no importance to Dairy Processing, Buildings and Structures, and Nursery Production.

Controlling diseases and parasites was rated important by the Feed, Seed, and Fertilizer businesses with Dairy Processing and Nursery Production considering controlling diseases and parasites of no importance.

Management and marketing of poultry and livestock was rated of some importance and almost important by the Feed, Seed, and Fertilizer business, but it was of no importance to Buildings and Structures, Dairy Processing, and Farm Machinery.

The data also shows that identification and selection of breeds was of some importance to Feed, Seed, and Fertilizer, Farm Machinery, and Dairy Processing. Buildings and Structures and Nursery Production rated identification and selection of breeds of no importance.

The average total rating of training in the area of livestock and ppultry revealed feeding and controlling diseases and parasites as the only two of some importance to most of the farm related businesses.

TABLE V

AVERAGE RATING OF IMPORTANCE OF TRAINING IN LIVESTOCK AND POULTRY

FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings and Structures	Nursery Production	Feed, Seed, and Fertilizer	Average Total
Identification and Selection of Breeds	35	44	11	9	45	28
Management of Poultry and Livestock	30	11	14	9	63	31
Marketing of Poultry and Livestock	22	11	11	9	40	22
Feeding of Poultry and Livestock	40	11	13	14	82	39
Controlling Diseases and Parasites	27	33	15	9	69	34

Table VI shows that figuring bills of material is important and almost essential for the Buildings and Structures business while Farm Machinery and Feed, Seed, and Fertilizer businesses rated it of some importance and almost important. Dairy Processing and Nursery Production rated figuring bills of material of some importance.

Farm power and machinery was rated important by Farm Machinery and of some importance by Dairy Processing and Nursery Production. Buildings and Structures and Feed, Seed, and Fertilizer rated farm power and machinery of no importance.

Bolt cutting and threading and oxyacetylene welding were rated almost important by Farm Machinery and of some importance by Dairy Processing. They were of no importance to Buildings and Structures, Nursery Production and Feed, Seed, and Fertilizer.

Farm Machinery rated arc welding almost important while it was of no importance to Dairy Processing, Buildings and Structures, Nursery Production, and Feed, Seed, and Fertilizer.

Farm carpentry was important for Buildings and Structures and of some importance for Farm Machinery and Nursery Production. Feed, Seed, and Fertilizer and Dairy Processing rated farm carpentry of no importance.

As evidenced by the findings, training in buildings and structures was rated important for the Buildings and Structures business and of some importance by Nursery Production. Dairy Processing, Farm Machinery and Feed, Seed, and Fertilizer businesses considered training in buildings and structures of no importance.

Planning the home farm shop was of some importance for Farm Machinery, Buildings and Structures and Nursery Production, Feed, Seed, and Fertilizer, and Dairy Processing found planning the home farm shop of no importance.

TABLE VI

AVERAGE RATING OF IMPORTANCE OF TRAINING IN FARM MECHANICS FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings And Structures	Nursery Production	Feed, Seed, And Fertilizer	Average Total
Planning the home Farm Shop	53	0	45	47	18	36
Farm electrification	30	0	31	28	13	23
Project Work	47	22	42	23	18	32
Farm Carpentry	43	11	69	47	20	44
Buildings and Structures	30	11	77	42	27	45
Arc Welding	61	11	18	14	10	24
Farm Power and Machinery	84	44	23	33	26	38
Figuring Bills of Material	63	33	95	47	61	70
Plumbing and Pipe Work	30	33	47	52	17	34
Bolt cutting and Threading	50	33	25	28	6	28
Oxyacetylene Welding	58	33	12	28	8	23
Farm Water Supply	30	0	31	28	22	24

Project work was of some importance to Farm Machinery and Buildings and Structures while Dairy Processing, Nursery Production, Feed, Seed, and Fertilizer business found project work of no importance.

Farm electrification and farm water supply were found to be of no importance for all five farm related occupations.

The average total rating shows all items except farm electrification, arc welding, bolt cutting and threading, oxyacetylene welding, and farm water supply as being of some importance to most of the farm related occupations.

Training in Farm Business

An analysis of Table VII reveals that keeping farm records, figuring taxes, and securing capital were rated of some importance and almost important by all businesses except Dairy Processing.

Selecting and buying insurance was of some importance to Nursery Production and Farm Machinery, but was of no importance to Feed, Seed, and Fertilizer, Dairy Processing, and Buildings and Structures.

The average total rating showed that with the exception of selecting and buying insurance, all other items of training in farm business were of some importance to most of the farm related occupations.

Leadership Training

In analyzing the data in Table VIII, being officer of a chapter or chairman of a committee and competing in speech contests were rated of some importance by all selected farm related occupations. Several of the businesses rated them almost important.

Competing in shows and fairs was rated of some importance by all except Buildings and Structures.

The average total rating shows all training in FFA activities was of some importance to all selected farm related occupations, with speech training given the highest ratings and competing in shows and contests the lowest.

TABLE VII

AVERAGE RATING OF IMPORTANCE OF TRAINING IN FARM BUSINESS

FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings And Structures	Nursery Production	Feed, Seed, And Fertilizer	Average Total
Keeping farm records	53	0	36	52	50	44
Figuring taxes	51	11	44	61	48	47
Securing capital	58	0	40	60	34	43
Selecting and Buying Insurance	45	0	31	47	19	30

TABLE VIII

AVERAGE RATING OF IMPORTANCE OF TRAINING IN F.F.A. ACTIVITIES

FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings And Structures	Nursery Production	Feed, Seed, And Fertilizer	Average Total
Officer of chapter or chairman of a committee	53	55	42	56	48	41
Competing in shows and Fairs	45	33	28	42	45	38
Competing in Speech Contests	45	44	42	61	48	47

Training in English

An analysis of Table IX shows that the ability to speak and write clearly was essential for Dairy Processing and highly important for Farm Machinery, Buildings and Structures, Nursery Production and Feed, Seed, and Fertilizer.

Farm Machinery, Dairy Processing, Buildings and Structures, and Feed, Seed, and Fertilizer rated how to spell correctly and use correct English highly important while Nursery Production found it almost important.

Writing a good letter was rated important by Farm Machinery and Buildings and Structures and almost important by Dairy Processing, Nursery Production, and Feed, Seed, and Fertilizer.

The average total rating reveals that all items of training except writing a good letter were rated important by all farm related occupations. Writing a good letter was rated almost important. This indicates the importance of English in the curriculum which will enable the graduate to communicate effectively and clearly with others.

Business Training

In analyzing Table X a very interesting fact was revealed. All five selected farm related businesses rated salesmanship as important and almost essential by the majority of businesses.

Bookkeeping was important to Feed, Seed, and Fertilizer, and Nursery Production and almost important to Farm Machinery, Dairy Processing and Buildings and Structures.

Farm Machinery, Buildings and Structures, and Feed, Seed, and Fertilizer rated typing almost important while it was just of some importance to Dairy Processing and Nursery Production.

The average total rating showed salesmanship as highly important to all businesses while typing and bookkeeping were almost important to all. This indicates that it is quite important that young people

TABLE IX

AVERAGE RATING OF IMPORTANCE OF TRAINING IN ENGLISH

FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings And Structures	Nursery Production	Feed, Seed, And Fertilizer	Average Total
Ability to speak and write clearly	86	100	91	71	83	86
How to spell correctly	84	77	80	61	76	78
Use correct English	76	77	80	61	67	73
Writing a good letter	66	55	69	61	62	65

TABLE X

AVERAGE RATING OF IMPORTANCE OF TRAINING IN BUSINESS

FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings And Structures	Nursery Production	Feed, Seed, And Fertilizer	Average Total
Typing	48	33	51	47	59	51
Bookkeeping	63	55	63	66	65	64
Salesmanship	92	74	91	85	83	87

planning to enter these occupations have some formal business training while in high school.

Science Background

Table XI shows general science of some importance to Farm Machinery, Dairy Processing, and Nursery Production while it was almost of some importance to Buildings and Structures and Feed, Seed, and Fertilizer business.

Nursery Production rated general chemistry almost important and Farm Machinery, and Dairy Processing rated it of some importance. It was of no importance to Buildings and Structures and to Feed, Seed, and Fertilizer.

Physics was of some importance to Dairy Processing and of no importance to all others.

Biology was found almost important to Nursery Production, of some importance to Dairy Processing, and of no importance to Farm Machinery, Buildings and Structures, and Feed, Seed, and Fertilizer.

The average total rating shows general science as the only item of training in the area of science as being only of some importance.

Background in Mathematics

Table XII reveals basic arithmetic as essential to Dairy Processing and almost essential to all other businesses involved.

Algebra was of some importance and almost important to Farm Machinery and Buildings and Structures. Algebra was important to Dairy Processing. It was of no importance to Nursery Production and Feed, Seed, and Fertilizer business.

Geometry was rated of some importance to Buildings and Structures, Dairy Processing and Farm Machinery, but it was of no importance to Nursery Production or to Feed, Seed, and Fertilizer.

TABLE XI

AVERAGE RATING OF IMPORTANCE OF TRAINING IN SCIENCE

FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings and Structures	Nursery Production	Feed, Seed, and Fertilizer	Average Total
General Science	40	44	32	57	31	37
General Chemistry	33	44	16	61	24	28
Physics	20	33	14	28	12	17
Biology	20	33	14	57	21	23

TABLE XII

AVERAGE RATING OF IMPORTANCE OF TRAINING IN MATHEMATICS

FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings and Structures	Nursery Production	Feed, Seed, and Fertilizer	Average Total
Basic Arithmetic	70	100	95	95	95	92
Algebra	51	66	54	28	31	44
Geometry	38	33	48	28	26	36
Trigonometry	20	33	27	14	14	20

Trigonometry was of no importance to all businesses except Dairy Processing which felt it was of some importance.

The average total rating shows basic arithmetic as being almost essential with algebra and geometry of some importance and trigonometry of no importance.

Industrial Arts and Driver Education Training

Data from Table XIII shows cabinet making, recognizing different wood and wood finishing as being important to Buildings and Structures, but they were of no importance to Farm Machinery, Dairy Processing, Nursery Production and Feed, Seed, and Fertilizer.

Operating power equipment in the shop was rated important by Farm Machinery and Buildings and Structures. It was of some importance to Dairy Processing, Nursery Production, and Feed, Seed, and Fertilizer.

Operating power equipment in the shop had the only average total rating of some importance while cabinet making, recognizing different wood, and wood finishing were rated close to being of some importance. In schools with adequate vocational agriculture shops, the students obtain this background in operating power equipment without taking an industrial arts course.

An analysis of Table XIV shows knowledge of driver's training important and almost essential for all five farm related occupations.

The average total rating shows knowledge of drivers' training highly important to all businesses.

Additional Training Needed in Nursery Production Employ

The information presented in Table XV came from the additional comments and suggestions made by the Nursery Production businesses. They felt that this additional training in horticulture was needed in order to work in their type of business.

TABLE XIII

AVERAGE RATING OF IMPORTANCE OF TRAINING IN INDUSTRIAL ARTS

FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings And Structures	Nursery Production	Feed, Seed, And Fertilizer	Average Total
Cabinet making	13	0	66	9	10	29
Recognizing different Wood	8	0	68	14	9	29
Wood finishing	3	0	70	9	3	26
Operating power Equipment in the shop	69	55	66	38	37	54

TABLE XIV

AVERAGE RATING OF IMPORTANCE OF DRIVERS' TRAINING

FOR SELECTED FARM RELATED OCCUPATIONS

ITEM OF TRAINING	Farm Machinery	Dairy Processing	Buildings And Structures	Nursery Production	Feed, Seed, And Fertilizer	Average Total
Drivers' training	78	89	90	85	95	88

TABLE XV

ADDITIONAL TRAINING IMPORTANT FOR WORKING IN NURSERY PRODUCTION

Item of Training	Nursery Production	
	Number	Percent
Identification of Plants	5	71
Greenhouse production	5	71
Planting of trees and shrubs	5	71
Propagation of plants	5	71
Insect control	4	57
Pruning of trees and shrubs	2	28
Landscaping	2	28
Soil chemistry	1	14

It was interesting to note that five, or 71.4 percent, of the Nurseries indicated that the following were important: identification of horticulture plants, greenhouse production, planting of trees and shrubs, and propagation of plants.

Four, or 57.1 percent, felt that insect control in horticulture is important training to work in that business.

Pruning of trees and shrubs and landscaping was considered important by two, or 28.5 percent, of the Nurseries.

One, or 14.2 percent, said soil chemistry was needed in order to work in Nursery Production.

This is an area which is neglected by our teachers of vocational agriculture. Those departments near large population centers would be at an advantage to include horticulture training in their curriculum.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of this study was to attempt to determine the most important farm related occupations; what pre-employment training is needed in order to work in selected farm related occupations; and the trend in the next five to ten years concerning opportunities for employment in occupations related to agriculture.

The most important selected farm related occupations as determined primarily by vocational agriculture teachers working in the four county area were: Farm Machinery; Dairy Processing; Buildings and Structures; Nursery Production; and Feed, Seed, and Fertilizer.

A total of 63 businesses were visited using the personal interview method in obtaining the information needed. Selected areas of training were used to determine the training that was important for a particular farm related business. Additional comments and suggested areas of training were obtained from each of the five types of farm related occupations before the initial interviewing of all businesses began.

It was found that there is an expected increase in employment in the next five to ten years in all five related occupations. Nursery Production had the largest expected increase of 60 percent while Farm Machinery anticipates a 42.8 percent increase. A 25.6 percent increase is expected by Buildings and Structures with Dairy Processing and Feed, Seed, and Fertilizer anticipating only a slight increase of 3.3 and 3.7 percent. Automation and mechanization were the reasons given for the low increase

in employment.

Four years of vocational agriculture training was considered important by 71.4 percent of the Nursery Production; 69.2 percent of the Farm Machinery; 57.8 percent of the Feed, Seed, and Fertilizer; and 14.2 percent of the Buildings and Structures. Sixty-six percent of the Dairy Processing felt two to three years was sufficient training.

A farm background was rated almost important for Farm Machinery, Nursery Production, and Feed, Seed, and Fertilizer. It was of no importance to Dairy Processing or to Buildings and Structures.

In Agronomy, Farm Machinery considered harvesting of crops important and all other items of some importance with the exception of diseases of crops which was of no importance. All items of training in Agronomy were of no importance to Dairy Processing and Buildings and Structures. The identification of crops, insect control, and the kinds and uses of fertilizer were important for the Feed, Seed, and Fertilizer business with the remaining items of training in Agronomy of lesser importance. Nursery Production rated the kinds and uses of fertilizer highly important with all other items except pasture and range management of less importance.

The feeding of livestock and poultry and controlling diseases and parasites were important to Feed, Seed, and Fertilizer, while all other items of training were of some importance. Farm Machinery found identification and selection of breeds and the feeding of poultry and livestock of some importance. Controlling diseases and parasites, and identificaand selection of breeds were of some importance to Dairy Processing. The area of livestock and poultry was of no importance to Nursery Production and Buildings and Structures.

In the area of farm mechanics, training in farm power and machinery

was highly important for Farm Machinery while all other items of training were rated almost important except farm electrification, buildings and structures, plumbing and pipe work, and farm water supply, which were of no importance.

Those items of training in farm mechanics that were of some importance to Dairy Processing were: farm power and machinery, figuring bills of material, plumbing and pipe work, bolt cutting and threading, and oxyacetylene welding.

Figuring bills of material in farm mechanics was almost essential to Buildings and Structures with farm carpentry and knowledge of buildings and structures being important.

Nursery Production found the following training in farm mechanics to be of some importance: planning the home farm shop, farm carpentry, buildings and structures, farm power and machinery, figuring bills of material, and plumbing and pipe work. The Feed, Seed, and Fertilizer business found that figuring bills of material was important training.

All items of training in farm business with the exception of selecting and buying insurance were of some importance to Farm Machinery, Buildings and Structures, Nursery Production, and Feed, Seed, and Fertilizer. Training in farm business was of no importance to Dairy Processing.

Training through FFA activities was of some importance to all five farm related occupations and close to important in some cases.

Also training in English was rated highly important by Farm Machinery and Buildings and Structures. Dairy Processing rated all training in English except writing a good letter as essential or important. Nursery Production and Feed, Seed, and Fertilizer rated all training in English as important or nearly important.

In the area of business, a very significant point was revealed. Salesmanship was rated highly important by all five farm related occupations and almost essential by some. Typing and bookkeeping were of some importance to important to all related occupations.

General science and chemistry were of some importance to Farm Machinery. All training in science was of some importance to Dairy Processing. Buildings and Structures and Feed, Seed, and Fertilizer believed general science to be almost of some importance. Nursery Production rated general science, general chemistry, and biology almost important.

Basic arthmetic was found to be almost essential by all related occupations. Algebra and geometry was of some importance to Farm Machinery and Buildings and Structures. Dairy Processing believed algebra to be important while geometry and trigonometry were of some importance.

In Industrial Arts, operating power equipment in the shop was important to Buildings and Structures and Farm Machinery, and of some importance to the other related occupations. All training in industrial arts was important to Buildings and Structures.

Knowledge of drivers' training was highly important to all farm related occupations.

It was interesting to discover that Nursery Production felt additional training in horticulture was needed to work in this business. Seventy-one percent believed the following were important: identification of horticulture plants, greenhouse production, planting of trees and shrubs, and propagation of plants. Over half, or 57.1 percent, said insect control in horticulture was needed. The pruning of trees and shrubs, landscaping, and soil chemistry were indicated as being important by 28.5 percent or less.

Conclusions

It can be concluded from data presented in this study that the future trend in employment will be on the increase for the majority of the selected farm related occupations studied.

Results show that training in vocational agriculture is important for securing employment in these related occupations.

Due to the exceptionally high rating of salesmanship, there would be a sound basis for offering some type of curriculum which would cover this area.

It appears very evident that additional training in the area of horticulture is needed in order to work in Nursery Production. The trend in employment clearly shows that Nursery Production will need many more qualified workers in the near future.

From the many comments made by businesses while this study was being conducted, it could be stated that the more a person can stand before people and learn how to express himself, the better the individual. The ability to recognize a customer's needs is very essential to anyone attempting to work in any of these selected farm related occupations.

Recommendations

As a result of this study, it is recommended that more research be conducted concerning training needed for farm related occupations in still different parts of Oklahoma and include other important farm related occupations not used in this study. This will better enable us to see what the total picture is concerning training for related occupations.

It is recommended that teachers of vocational agriculture include more horticulture in their teaching in order to more adequately prepare

those who might enter into Nursery Production as a field of work.

It should be recognized that three of the five related occupations expect to employ many more workers in the near future and that these same businesses feel that Vocational Agriculture is important training for employment in these occupations. Teachers of Vocational Agriculture are in a position to train their students in order to fill these positions.

Findings in this study serve as a sound basis for recommending that some formal business training, especially as it applies to salesmanship, be taken while in high school for those planning to enter into these occupations. ~~Studies in the review of literature back up this recommendation.~~ Further investigation should be made into the possible need of joint programs of vocational education between Distributive Education and Agricultural Education which would better train youth to be qualified for related farm occupations in Agricultural Industry

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A P P E N D I X

519½ S. Lewis
Stillwater, Okla.
January 15, 1962

Dear Sir:

I am conducting a study as to the training needed for high school graduates who enter into farm related occupations. Enclosed you will find a list of farm related occupations.

I am asking that you rate these as to their importance in your county. These should be farm related businesses that might hire a student with only a high school education.

I will appreciate it very much if you will do this for me as soon as possible so that I may begin this study. Thank you very much for your time and help.

Sincerely,

Burl B. Richardson
Graduate Student
Oklahoma State University

LIST OF FARM RELATED OCCUPATIONS

Rate (by number as indicated below) the related occupations as to their importance in your county. Leave those blank which would probably require more than a high school education.

1 - Important.
2 - Of some importance.
3 - Of no importance.

Agriculture Industry:

___ Machinery & Equipment
___ Food Processing
___ Grain & Seed Processing
___ Meat & Poultry Packing
___ Fertilizer & Lime
___ Pesticides & Herbicides
___ Feed Manufacturing
___ Dairy Processing
___ Buildings & Utilities
___ Forest Products
___ Nursery Production

Agriculture Business:

___ Banking & Credit
___ Insurance
___ Farm Management
___ Cooperative Management
___ Land Appraisal
___ Grading, Packaging, & Labeling of Agriculture Products
___ Marketing Agriculture Products
___ Transportation of Agri. Products

Agriculture Communications:

___ Farm Reporting
___ Market Reporting
___ Publications
___ Exhibiting
___ Training

Agriculture Conservation:

___ S.C.S. Worker
___ Wildlife
___ Turf

Others Not Listed:

The purpose of this interview form is to collect information from farm related businesses in this county concerning what training is needed for high school graduates who plan to enter into farm related occupations.

* * * * * * * * * * * * * * * * *

Rate each of the items listed below according to their importance in aiding a high school graduate to obtain a job in your business. If you feel any item of training would not be of value, place a check in the column "of no importance." However, if you feel an item is important to some degree, place a check in one of the other three columes which will indicate the degree of importance you feel it is.

General Information:

A. Type of business this is-_____

B. Total number of employees at present-_____

C. Total number expected in the next 5 to 10 years-_____

D. Years of Vocational Agriculture considered important (check one)
___ None
___ 1 year
___ 2 years
___ 3 years
___ 4 years

Specific Information:

	Essential	Important	Of Some Importance	Of No Importance
1. A farm background.....				
2. Training in Agronomy to include:				
a. Identification of crops.....				
b. Diseases of crops.....				
c. Insect control.....				
d. Planting of crops.....				
e. Pasture & range management.....				
f. Soil management & conservation...				
g. Kinds of fertilizers & uses.....				
h. Harvesting of crops.....				
i. Other_____.....				
j. _____.....				
3. Training in area of Livestock and poultry to include:				
a. Identification & selection of breeds.....				
b. Management of poultry & livestock				
c. Marketing of poultry & livestock.				
d. Feeding of poultry & livestock...				
e. Controlling diseases & parasites.				
f. Other_____.....				
_____.....				

	Essential	Important	Of Some Importance	Of No Importance
4. Training in Farm Mechanics to include:				
a. Planning the home farm shop.....				
b. Farm electrification.....				
c. Project work.....				
d. Farm carpentry.....				
e. Buildings and Structures.....				
f. Farm water supply.....				
g. Arc Welding.....				
h. Farm power & machinery.....				
i. Figuring bills of material.....				
j. Plumbing & pipe work.....				
k. Bolt cutting & threading.....				
l. Oxyacetylene welding.....				
m. Other_____.....				
_____.....				
5. Training in Farm Business to include:				
a. Keeping farm records.....				
b. Figuring taxes.....				
c. Securing capital.....				
d. Selecting & buying insurance.....				
e. Other_____.....				
_____.....				
_____.....				
6. F.F.A. Activities to include:				
a. Officer of chapter or chairman of a committee.....				
b. Competing in shows & fairs.....				
c. Competing in speech contests.....				
d. Other_____.....				
_____.....				
7. Knowledge of English:				
a. Ability to speak & write clearly.				
b. How to spell correctly.....				
c. Use correct English.....				
d. Writing a good letter.....				
e. Other_____.....				
_____.....				
8. Area of Business:				
a. Typing.....				
b. Bookkeeping.....				
c. Salesmanship.....				
d. Other_____.....				
_____.....				
9. Knowledge of Science:				
a. General Science.....				
b. General Chemistry.....				
c. Physics.....				
d. Biology.....				
e. Other_____.....				

	Essential	Important	Of Some Importance	Of Some Importance
10. Knowledge of Mathematics:				
a. Basic Arithmetic.....				
b. Algebra.....				
c. Geometry.....				
d. Trigonometry.....				
e. Other_____.....				
11. Knowledge of Industrial Arts to include:				
a. Cabinet making.....				
b. Recognizing different wood.....				
c. Wood finishing.....				
d. Operating power equipment in the shop.....				
e. Other_____.....				
_____.....				
_____.....				
12. Knowledge of Drivers' Training which includes ability to drive a car, truck, or bus.....				
13. Any other areas:.....				

VITA

Burl Burton Richardson

Candidate for the degree of

Master of Science

Report: DETERMINING THE TRAINING NEEDED FOR SELECTED FARM RELATED OCCUPATIONS IN FOUR COUNTIES IN OKLAHOMA

Major Field: Agricultural Education

Biographical:

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